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FEMALE MEDICAL OUT-PATIENT EXAMINATION GOWNS - THE ESTABLISHMENT OF FUNCTIONAL AND AESTHETIC REQUIREMENTS AND THE PRODUCTION OF A NEW DESIGN

by

© GAIL BACHYNSKI

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF SCIENCE

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FACULTY OF HOME ECONOMICS

EDMONTON, ALBERTA

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THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

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Date February 24, 1977

ABSTRACT

Female Medical Out-Patient Examination Gowns - The Establishment of Functional and Aesthetic Requirements and the Production of a New Design

by

Gail Bachynski, Master of Science

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The purpose of this study was twofold: 1) to establish the functional and aesthetic requirements of female patients and hospital staff in terms of out-patient examination gowns; and 2) to produce a new gown which fulfilled these requirements. This was accomplished through two separate studies: The Pilot Study, which established the criteria for designing a hospital gown which would eliminate some of the problems found in standard examining gowns; and the Comparison Study, the main focus of this work, which compared reactions of patients and staff to the gown designed for this study and the standard hospital gown.

For the Pilot Study, a random sample of 103 female patients was selected from the out-patient clinic of the Dr. W.W. Cross Cancer Institute in October, 1976. The results of the Pilot Study revealed that the patients' major requirement was for privacy. That is, all

gown characteristics that affect the degree of privacy patients experience while wearing a gown are potential sources of embarrassment or discomfort to them. Pilot Study interviews with clinical staff revealed that their major requirement was for complete and easy accessibility to all parts of the body and that in terms of this requirement, the standard gown presently being used presented functional inadequacies. Taking the pilot study findings into consideration, a new examination gown was designed.

For the Comparison Study two random samples of 50 women each were selected from the out-patient clinic at the Dr. W. W. Cross Cancer Institute in November, 1976. Reactions to the new design were compared to reaction to the standard gown on the following characteristics: Fit/size, physical comfort, function, fashion value, colour and privacy. Differences between the two gowns were significant in favour of the new design for fit/size factors, colour, and privacy only. It was assumed that the provision of privacy and improved fit/size factors were a function of the wraparound panels in the new design. When the two gown groups were further divided according to age, dress size, number of clinic visits and number of procedures undergone, the significant differences remained for selected categories of these variables, especially for women in the 40-54 age group. Interviews with clinical staff revealed that while some of the functional inadequacies encountered with the standard gown had been eliminated, others, particularly in terms of examining the back chest and neck area, had been created.

It was concluded that certain features of the new gown design such as the wrapped panels which provided privacy and improved fit were

successful and worthwhile retaining for patient comfort. Other gown features should be modified in order to eliminate the problems encountered in terms of the functional requirements of both physicians and patients.

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INTRODUCTION

Perhaps more than any other disease that affects man, cancer has tremendous impact on human behavior: In part because certain cancers can cause pain and suffering; in part because it can be fatal, in part because the term "cancer" evokes an entire gamut of emotions ranging from terror, escape and resistance, to informed rational conduct.

According to Bard (1972), the problem of emotional adaptation to cancer and its treatment is inseparable from the larger problem of human communication.

> Anxiety, present in every cancer patient, is a formidable barrier between him and those around him. It causes distortions, shifts in emphasis, indeed inability to comprehend, to remember, or even to hear. If one wants to be sure communication is successful, efforts must be made to allay disruptive anxiety. (p. 24)

It is believed that the required out-patient examination gowns may be a source of embarrassment or discomfort to patients and that anxiety stemming from this source can be avoided by supplying them with gowns which they find appealing in terms of design, colour and comfort.

> Generally positive attitudes towards one's clothes tend to reinforce a generalized positive feeling toward the self, while negative responses contribute to the deprivation of self. (Horn, 1975, p. 139)

It is therefore suggested that clothing can play a role in facilitating the communication needed for the emotional adaptation to cancer and its treatment. By offering patients clothing which will reinforce a positive feeling toward the self, depreciating negative responses towards the required examination gowns may be avoided,

leaving patients more receptive to effective communication.

Statement of the Problem

The problem is to design a female out-patient examination gown which is:

1. appealing to the majority of patients in terms of design, colour, fit and comfort;
2. functional in terms of the physician's accessibility to the patient for examination;
3. acceptable in terms of radiographic, radiotherapeutic, and nursing procedures performed on the patient;
4. acceptable in terms of institutional laundry procedures;
5. acceptable for commercial production.

This will be done by means of an exploratory study.

Objectives

The objectives of this study were as follows:

1. Evaluate and classify out-patient examination gowns presently being used in terms of physical factors (i.e. colour changes, fit/size, function, maintenance, physical comfort) and social psychological factors (i.e. fashion value, and psychological processes as they relate to colour preference and privacy) which could contribute to the embarrassment or discomfort of female patients.
2. Develop two out-patient questionnaires: The Pilot Study Questionnaire which measures the relative importance of various

physical and social psychological factors in contributing to the embarrassment or discomfort of female patients with regard to examination gowns in general; and the Comparison Study Questionnaire which obtains their opinions (in terms of fit/size, function, physical comfort, fashion value, colour, and privacy) with regard to two specific examination gown designs.

3. Assess the relative importance of the various physical and social psychological factors in contributing to the embarrassment or discomfort of female patients to examination gowns in general.
4. Delineate, through interviews with full time physicians, and representatives of the nursing staff, radiographic, radiotherapeutic staff, and laundry department staff, each group's functional requirements in terms of the examination gowns worn by female out-patients. The interviews took place before the new gown design was introduced.
5. Assess female out-patient opinions (in terms of fit/size, function, physical comfort, fashion value, colour and privacy) with regard to two specific examination gown designs, the standard gown and the new gown.
6. Evaluate the new gown design in terms of the extent to which it fulfills the requirements of the physicians and each staff group in the hospital setting.

Hypotheses

The hypotheses for this study are stated in the null form.

Hypothesis 1. There will be no significant differences between patients wearing the standard gown (Group A) and patients wearing the new gown design (Group B) in terms of opinions on:

a) size/fit factors

b) physical comfort

c) function factors

d) fashion value factors

e) colour

f) privacy factors

2. When subjects are further grouped by age, there will be no significant differences between patients wearing the standard gown (Group A) and patients wearing the new gown design (Group B) in terms of opinions on:

a) size/fit factors

b) physical comfort

c) function factors

d) fashion value factors

e) colour

f) privacy factors

3. When subjects are grouped according to dress size, there will be no significant differences between patients wearing the standard gown (Group A) and patients wearing the new gown design (Group B) in terms of opinions on:

a) size/fit factors
b) physical comfort
c) function factors
d) fashion value factors
e) colour
f) privacy factors

4. When subjects are grouped according to frequency of contact at the clinic, there will be no significant differences between patients wearing the standard gown (Group A) and patients wearing the new gown design (Group B) in terms of opinion on:
   a) size/fit factors
   b) physical comfort
   c) function factors
   d) fashion value factors
   e) colour
   f) privacy factors
5. When subjects are grouped according to the number of medical procedures undergone, there will be no significant differences between patients wearing the standard gown (Group A) and patients wearing the new gown design (Group B) in terms of opinions on:
   a) size/fit factors
   b) physical comfort
   c) function factors
   d) fashion value factors

e) colour

f) privacy factors

Definition of Terms

For the purpose of this study, terms, which for the most part relate to the patient questionnaires in Appendix III, were defined as follows.

Standard gown: The patient examination gown presently in use at The W.W. Cross Cancer Institute, Edmonton, Alberta (see Hospital gown - Style B, Appendix IX).

Patient examination gowns were evaluated according to the following factors.

a) Physical factors are examination gown characteristics related to the physical properties of the fabric or garment. These factors are related to colour change, fit/size, function, maintenance and physical comfort, and were operationally defined as:

i. Colour change - factors which relate to the changes in the colour of a gown through staining, greying or fading as measured by questions 1 and 2 in the Pilot Study Patient Questionnaire.

ii. Fit/size - factors which relate to the fit of a gown and include the gown being excessively large or small, long or short as measured by questions 3, 4, 5 and 6 in the Pilot Study and by questions 1 and 2 in the Comparison Study Patient Questionnaires.

iii. Function - factors which relate to the ease with which a patient can decide how the gown should be worn and to functional characteristics of the gown including the ease of getting into the

gown and the ease of fastening or typing the gown. This was measured by questions 14, 15 and 16 in the Pilot Study and questions 4, 5 and 6 in the Comparison Study Patient Questionnaires.

iv. Maintenance - factors which relate to the general physical condition of the gown such as wrinkling, frayed edges, split seams or holes, and shearness of the garment due to wear. This was measured by questions 11, 12 and 13 in the Pilot Study Patient Questionnaire.

v. Physical comfort - factors which relate to a gown being too warm or not warm enough, to static cling; and non-absorbent properties of the fabric. This was measured by questions 7, 8, 9 and 10 in the Pilot Study and question 3 in the Comparison Study Patient Questionnaires.

b) Social Psychological factors are those factors which are attributable to emotional, aesthetic or judgemental process of the individual. These factors are related to fashion value and psychological processes and were operationally defined as:

i. Fashion value - factions which relate to "style" including liking or disliking the over-all style and specific style features (sleeves and neckline) of a gown. This was measured by questions 17, 18 and 19 in the Pilot Study and questions 7, 8 and 9 in the Comparison Study Patient Questionnaire.

ii. Psychological factors - factors which relate to personal judgemental processes including liking or dislikability of a particular colour; and privacy which is operationally defined as the suitability of a gown for wear in public areas of the hospital. Privacy is measured by the suitability of a gown for wear by itself, with pyjama bottoms and with a robe over it. Colour and privacy were

measured by questions 20, 21, 22 and 23 in the Pilot Study and questions 10, 11, 12 and 13 in the Comparison Study Patient Questionnaires.

Medical terms:

a) Radiography: the making of a record or photograph by means of the action of actinic rays on a sensitized surface (Dorland, 1965).

b) Radiotherapy: The treatment of disease by roentgen rays or other radiant energy (Dorland, 1965).

Limitations

The limitations of this study are as follows:

1. This was the trial of new instruments therefore the validity and reliability have not been established.
2. The sample is representative only of female out-patients at The Dr. W. W. Cross Cancer Institute in Edmonton, Alberta; generalizations cannot be made beyond this population.
3. All respondents may not have completed the questionnaire with the same degree of conscientiousness.

REVIEW OF LITERATURE

The literature in the area of patient examination gowns is extremely limited. This review will include a review of styles of patient examination gowns presently available and related research in the area of out-patient and hospitalized patient clothing.

Styles of Patient Examination Gowns Presently Available

A list of 19 hospital apparel manufacturers in Canada was compiled from the University of Alberta Hospital Purchasing Department's listings and from various medical publications. Each of these manufacturers was requested to supply information regarding styles of patient examination gowns presently being offered and their price range. Of 19 manufacturers contacted, 12 responded with catalogues and price lists (see Appendix X).

Through the comparison of these catalogues, it was noted that the price range of fabric patient examination gowns is between $4.00 and $10.00; most are around $6.50. Most of the prices vary because of the type and amount of fabric used. Those in the lower price range are of 100% cotton with no over-lapping of fabric at the back. Those in the medium and higher price range are of 100% polyester, a blend of polyester and cotton, or a blend of modacrylic and polyester. Gowns in the latter price range have over-lapping edges along the back opening.

Two styles of fabric gowns predominate: A standard type hospital examination gown which is suitable for both men and women and has

raglan sleeves and a center back opening with tie closures; and a gown which is basically the same but has over-lapping back panels and tie or snap closures (see Appendix IX).

The colours most often offered in addition to white, are pastel tints of blue, green, yellow, and pink. Plain fabric is most common but a limited selection of pastel printed fabrics is also available.

Manufacturers of disposable products sell long, short and sleeveless disposable patient gowns with a choice of side, front, or back openings. Some models include a waist tie. The price of the short gown is between 10 and 15 cents; the long gown is between 20 and 40 cents. Most of the difference in price is due to the type of disposable product used. Those in the lower range are of 3-ply facial tissue, while those in the higher price range are of 3-ply poly-reinforced tissue. Disposable gowns are offered in white and pale green only.

Out-patient Examination Gowns/Drapes

Bachynski (1976) did a survey of physicians and their staff in out-patient clinics and offices in Edmonton to determine: the types of patient examination gowns/drapes most commonly used; whether or not out-patient staff is satisfied with them; and what considerations are most important when examination gowns/drapes are ordered (see questionnaire, Appendix IX). Having eliminated non users of gowns from an alphabetical listing of 1,081 Edmonton doctors, every tenth physician was selected to comprise the sample for the study. Of the 63 physicians' offices contacted, 50 returned the questionnaire. A summary of the results follows.

Findings indicated that 32 percent of the doctors used a rectangular fabric or disposable drape only; 24 percent used Style A (Appendix IX) with or without a fabric drape, 24 percent used long or short disposable gowns with or without a disposable drape; and the remaining 20 percent used various combinations of the above, namely, poncho types, a wrap around gown, or side opening gowns.

Ninety-two percent of the practitioners and their office staff were completely satisfied with the type of examining gown/drape being used; 8 percent were only moderately satisfied. Fifty-eight percent of the physicians and their office staff considered easy accessibility to the patient for examination by the doctor the number one consideration when ordering examination gowns/drapes.

Generally, one can assume from the results of this study that the present designs are satisfying the needs of the majority of physicians in out-patient clinics and offices in Edmonton. The question which remains unanswered is whether or not the patients' needs are being satisfied.

It is the researcher's opinion that patients are largely dissatisfied with the gowns/drapes which they are required to wear in out-patient areas. This opinion is founded on personal observations and conversations with patients and staff during the researcher's ten year nursing career, four of which were spent nursing in out-patient areas. Some observations follow.

Patients who are not given specific instruction on how a gown should be worn often put the examination gown on back to front, causing inconvenience to the examining physicians and, very likely, an

accompanying degree of embarrassment to patients when they become aware of their error.

Physically weak, elderly, and handicapped patients frequently require assistance in tying or fastening closures which are above the waist along the gown back opening. Closures which are more easily accessible would permit these patients the dignity of dressing without requiring assistance and would be a time saving factor for staff. Another source of embarrassment or discomfort to some patients arises when, wearing clothing which they feel is unsuitable for wear in public, they are required to enter a public corridor or a waiting room lined with curious onlookers such as other patients and their friends or relatives.

Radiology departments are generally air conditioned to compensate for the heat generated by x-ray machinery. As a result, temperatures which may be comfortable for staff who are fully clothed and mobile, may be uncomfortably cool for the scantily attired patients who are awaiting examination or treatment. Out-patient offices and clinics which are air conditioned pose the same problem, sometimes to an even greater degree because patients may be given only a paper or fabric drape with which to cover their bodies while awaiting examination. This source of embarrassment or discomfort could perhaps be eliminated by having pyjama bottoms and/or a robe available for the patients to wear.

The above observations would appear to support the researcher's opinion that patients are largely dissatisfied with the examination

gowns/drapes which they are required to wear. They also provide insight into some physical and social psychological factors which may be contributing to the embarrassment or discomfort of patients required to wear examination gowns.

Hospital Patient Clothing

Other than designs produced by hospital apparel manufacturers, very few clothing designs for hospitalized patients have been produced.

Mills (1968) designed a garment for use in male genito-urinary wards. The "wrap-over" pyjamas are not stitched in the crotch and thus enable urinary catheters to drain freely. The front panel of the trousers can easily be unbuttoned and folded back for wound inspection and dressing changes.

Tinkler (1970) designed a sarong type garment to facilitate the care of the urological patient for whom pyjamas were unsuitable. The wraparound "sarong" was made of cotton and had a drawstring waist tie. There was a generous overlap held in place by either two ties or Velcro contact fastening material. Tinkler considered the patient's comfort in addition to the functional requirements of the garment.

Tinkler (1972) also designed a "gown for all reasons." This gown is similar to the standard hospital patient gown with wide sleeves and an opening the full length of the garment at either center front or center back depending on how the garment is put on. The opening edges are overlapped and secured with snaps.

METHODS

This chapter includes a description of the subjects for the study, the instruments, and methods used for data analysis.

Subjects for the Study

The patient sample was selected from women attending the out-patient clinic of the Dr. W.W. Cross Cancer Institute, Edmonton, Alberta, for either diagnostic or therapeutic procedures. It consisted of three random samples: one group of 100 women (Pilot group) and two additional groups (Group A and Group B of the Comparison Study) of 50 women each. The schedule for randomly selecting the patient samples took into consideration the average number of patients seen at the clinic for each day of the week, the peak and non-peak hours for each day of the week, the maximum number of patients seen at one time, and the time lapse between patient appointments. This information was obtained from appointment schedules for the four week period preceding the start of data collection and from the staff of the out-patient area.

The Pilot Study, the main purpose of which was to gather information which would be useful in designing a hospital gown which eliminated some of the problems found in examining gowns, was conducted during the first 6 clinic days of October, 1976. The Comparison Study, conducted for the purpose of comparing reactions to the newly designed gown and the standard gown in present use at the Dr. W. W. Cross Cancer Institute, was carried out during the first 12 clinic days of November, 1976. Of the 233 patients who were asked to participate

in the study, 5 were too ill to participate, 6 were not able to speak or read English, 3 did not have to change into an examination gown, and 16 did not return the questionnaire. leaving a total patient sample of 203.

The staff sample, interviewed during the Pilot Study and again as part of the Comparison Study, consisted of 12 of the 20 full time physicians who examine female patients at the Dr. W. W. Cross Cancer Institute, and two representatives from each of the following areas: nursing, diagnostic and radiotherapeutic departments, and the laundry department.

The Pilot Study

Patient Background Information

The respondents were asked to state their age group, dress size, the number of times they had attended the clinic, and what examinations they had undergone that day. The format appears in Appendix II.

Outpatient Clothing Questionnaire for Pilot Study

This instrument (see Appendix III), devised specifically for the study, consists of 23 questions designed to measure the relative importance of various physical and psychological factors in contributing to the embarrassment or discomfort of female patients to required examination gowns in general. Values on a three point scale were assigned to patient responses for all questions. High mean values for individual physical and/or social psychological factors indicate that those factors are of high importance in contributing to embarrassment or

discomfort of female patients to examination gowns in general. Low mean values for physical and/or social psychological factors indicate that those factors are of low importance in contributing to embarrassment or discomfort of female patients to examination gowns in general. The mean values are recorded to establish the relative importance of the various factors, the possible range being 3 to 1 from most important to least important. The information obtained through the questionnaire results was used when designing a new gown.

The categorization of physical and social psychological factors as described in this study was revised from similar categories used in an exploratory study on clothing discards done at the University of Nevada by Jean Margerum (1974). The relative importance of physical and social psychological factors in contributing to embarrassment or discomfort of patients was measured as follows:

Physical factors (colour change, fit/size, physical comfort, maintenance, function):

1. Colour change factors - measured by questions 1 and 2.
2. Fit/size factors - measured by questions 3, 4, 5 and 6.
3. Physical comfort factors - measured by questions 7, 8, 9 and 10.
4. Maintenance factors - measured by questions 11, 12 and 13.
5. Function factors - measured by questions 14, 15 and 16.

Social psychological factors (fashion value and psychological factors):

1. Fashion value factors - measured by questions 17, 18 and 19.
2. Psychological factors (colour and privacy) - measured by questions 20, 21, 22 and 23.

Staff Interview Schedules for Pilot Study

Schedule for interview with physicians. Six full time physicians were asked three questions regarding the gown presently worn by every patient he or she examines.

1. What do you consider basic requirements in terms of the gown worn by female patients you are examining?
2. Have you encountered any problems with the examination gown presently in use?
3. Do you have any suggestions for improving the gown?

Schedule for interview with nursing staff. Two representatives of the nursing staff were asked three questions regarding the gown presently worn by female patients in the out-patient area.

1. What do you consider basic requirements in terms of the examination gown worn by female patients on whom you perform nursing procedures in the out-patient area?
2. Have you encountered any problems with the examination gown presently in use?
3. Do you have any suggestions for improving the gown?

Schedule for interview with radiographic/radiotherapeutic staff. Two representatives of both the radiographic and radiotherapeutic staff were asked three questions regarding the gown presently worn by every patient who undergoes radiology procedures:

1. What do you consider basic requirements in terms of the gown worn by female out-patients undergoing radiographic/radiotherapeutic procedures in your department?

2. Have you encountered any problems with the examination gown presently in use?
3. Do you have any suggestions for improving the gown?

Schedule for interview with laundry staff. Two administrative representatives of the laundry department were asked four questions concerning the laundering of out-patient examination gowns:

1. Do you use a standard laundry procedure for all out-patient examination gowns or is a basic procedure adjusted to different fabric needs?
2. If you use one standard laundry procedure for all out-patient examination gowns, please describe it.

OR

If you use a basic laundry procedure which is adjusted to different fabric needs, please describe the basic procedure and state the manner in which it is altered.

3. Have you encountered any problems in the laundering of the examination gowns presently in use at the Dr. W. W. Cross Cancer Institute?
4. Do you have any suggestions that would facilitate the laundering of examination gowns?

Design of the New Gown

The information obtained from patients and staff through the Pilot Study was reviewed and a new gown designed (see Appendix XII). The main considerations with regard to patients were to provide them with privacy and improved fit/size and functional characteristics. It was expected that the wrap around style would provide privacy and

improved fit/size and that functional characteristics would be improved by having the gown tie at the waist rather than at the back of the neck. Differences between the standard gown and the new design that might be due to colour change and maintenance factors were controlled by using only gowns which were in good physical condition and of the same fiber content (50/50 polyester/cotton). The ties were of 100% nylon twill tape which does not knot as readily as cotton in laundering. Forty gowns were constructed in two sizes comparable to the two sizes available in the standard gown. They were laundered twice to remove temporary fabric finishes.

Comparison Study: Standard Gown vs. New Design

Patient Background Information

The respondents were asked to state their age group, dress size, the number of times they had attended the clinic, and what medical procedures they had undergone that day. The format appears in Appendix II.

Out-patient Clothing Questionnaire for Comparison Study

This instrument devised specifically for the study, consists of 13 questions designed to obtain patient opinions (in terms of fit/size, physical comfort, function, fashion value, colour and privacy) towards the standard gown (Group A) and the new design (Group B) for the purpose of comparison. With regard to fit/size factors, all responses which did not consider the gown size and length as satisfactory, were regarded as negative responses. A positive opinion was recorded for a factor when the respondent answered in the affirmative

to all questions pertaining to that factor; otherwise a negative opinion was recorded for that factor. Opinions on the gowns with regard to all other physical and social psychological factors were measured as follows using the Out-patient Clothing Questionnaire - Comparison Study (see Appendix III).

Physical factors (fit/size, physical comfort, and function):

1. Fit/size factors - measured by questions 1 and 2.
2. Physical comfort factors - measured by question 3.
3. Function factors - measured by questions 4, 5 and 6.

Social psychological factors (fashion value and psychological factors):

1. Fashion value factors - measured by questions 7, 8 and 9.
2. Psychological factors - colour measured by question 10 and privacy measured by questions 11, 12 and 13.

Due to the nature of the research setting and the simplicity of the questionnaire, it was impractical to establish questionnaire validity in a formal way. Instead, the questionnaire was issued to fifteen volunteers who reviewed the questionnaire suggesting improvements with regard to question readability and comprehension. Several items were revised and the questionnaire reviewed once more.

Staff Interview Schedules re: New Design

All of the following interviews took place after the new examination gown design had been introduced. In each case staff members were reminded of what they considered basic requirements in terms of a patient examination gown for women. They were then asked the questions indicated below.

Schedule for interview with physicians. Twelve full time physicians were asked:

A.

1. Does the new gown meet these requirements?
   If not, specifically which of these requirements is not fulfilled?
2. Have you encountered any (other) problems with the gown?

B.

Do you have any objections to the patient wearing pyjama bottoms in addition to a gown when the examination you are doing permits this?

C.

In your opinion, should the new gown [devised for this study] be adopted for female patients in the out-patient clinic?

Schedule for interview with nursing staff. Two representatives of the nursing staff were asked:

A.

1. Does the new gown meet these requirements?
   If not, specifically which of these requirements is not fulfilled?
2. Have you encountered any (other) problems with the gown?

B.

Do you have any objections to the patient wearing pyjama bottoms in addition to a gown when the nursing procedure permits this?

C.

In your opinion, should the new gown [devised for this study] be adopted for female patients in the out-patient clinic?

Schedule for interview with radiologic/radiotherapeutic staff. Two representatives of both the radiographic and radiotherapeutic staff were asked:

A.

1. Does the new gown meet these requirements?

   If not, specifically which of these requirements is not fulfilled?

2. Have you encountered any (other) problems with the gown?

B.

Do you have any objections to the patient wearing pyjama bottoms in addition to a gown when the radiology procedure permits this?

C.

In your opinion, should the new gown [devised for this study] be adopted for female patients in the out-patient clinic?

Schedule for interview with laundry department. Two representatives of the laundry department were asked:

1. Is the new gown acceptable in terms of the laundering procedure(s) available?
2. In your opinion, should the new gown [devised for this study] be adopted?

Analysis of Data

The data were analysed using inferential and descriptive statistics. Background information for all respondents was tabulated according to frequency and percentage distributions.

All interview data from each of the five staff groups was summarized descriptively.

Scores of the Out-patient Clothing Questionnaire for the Pilot Study were computed to establish the degree of embarrassment or discomfort experienced in response to individual physical and social psychological factors. Mean values for each factor were recorded. Chi Square analysis was used to establish significant differences in opinions (in terms of fit/size, function, physical comfort, fashion value, colour, and privacy) between Group A and Group B with similar analyses to determine if opinions vary among age groups, dress size, frequency of contact at the clinic and number of procedures undergone. The five percent level of significance was chosen as the level of rejection of the null hypotheses.

FINDINGS AND DISCUSSION

The findings for this chapter will be discussed in terms of the Pilot Study, which was a preliminary study, and the Comparison Study, which was the main focus of this work. The purpose of the Pilot Study was to gather information which would be useful in designing a hospital gown which eliminated some of the problems found in standard examining gowns. The purpose of the Comparison Study was to compare reactions to the newly designed gown (based on findings in the Pilot Study) and the standard gown in present use at the Dr. W. W. Cross Cancer Institute.

Pilot Study

Background Data

Table 1 gives frequencies and percentage distribution data for 103 patients in the Pilot Study. Patient ages ranged from 15 years upward. The majority of patients were over 55 years of age. Only 18 women wore small dress sizes. The majority of women were in the medium and large dress size. The largest percentage (69.9%) of patients had attended the clinic more than 5 times. Most patients underwent either one or two medical procedures on the day of data collection. Only 12 patients underwent more than 2 procedures.

Table 1

Frequency and Percentage Distribution on Background Data of the Patients in the Pilot Study

Characteristic	Frequency	Adjusted Frequency (Percent)
Age Group	n=101	
15-24	4	4.0
25-39	11	10.9
40-54	25	24.8
55 +	61	60.4
Total	101	100.0
Dress Size	n=102	
small (size 8 or 10)	18	17.6
medium (size 12 or 14)	47	46.1
large (size 16 or larger)	37	36.3
Total	102	100.0
Total Number of Clinic Visits	n=103	
first time	13	12.6
2-5 visits	18	17.5
more than 5 visits	72	69.9
Total	103	100.0
Number of Medical Procedures on day of Testing	n=100	
1 procedure	43	43.0
2 procedures	45	45.0
3 procedures	11	11.0
4 procedures	1	1.0
Total	100	100.0

Ratings of Examination Gowns in General

When the Pilot Study patients wearing standard hospital gowns were asked to rate a series of 23 factors which could contribute to their embarrassment or discomfort, their ratings ranged as outlined in Table 2. The various physical and social psychological hospital gown factors which contribute to discomfort or embarrassment of female patients are listed in order of importance. The four factors causing the greatest degree of embarrassment or discomfort were wearing a gown which is too small; wearing only a gown in public areas of the hospital; wearing a gown which is too short; and wearing a gown which has become so sheer through wear that the body outline can vaguely be seen through it. Although "too small" and "too short" are defined as fit/size factors and "sheer through wear" is defined as a maintenance factor, they, in addition to "wearing only a gown in public areas," influence the degree of personal privacy which a patient will experience when wearing the gown. It would therefore appear that providing personal privacy for patients is the single most important consideration when designing an examination gown. Maintenance factors, physical comfort factors and function factors were next in contributing to patient embarrassment or discomfort. Individual factors indicated that a patient gown should provide body warmth, should not be of 100 percent synthetic fabric thus avoiding problems of static cling and non-absorbancy, should be easy to get into and easy to tie or fasten and should be a garment that patients will know how to put on. The least important gown characteristics were colour, fashion value factors and wearing a gown with a robe over it in

Table 2

Selected Factors (listed from highest to lowest in importance) Contributing to Embarrassment or Discomfort in 103 Female Patients with Regard to Examination Gowns in General

Factor	Mean Value
1. gown too small	2.660
2. wearing only a gown in public areas	2.640
3. gown too short	2.546
4. gown sheer through wear	2.510
5. permanent stains on gown	2.455
6. gown not warm enough	2.419
7. gown clings (static)	2.381
8. gown difficult to tie/fasten	2.351
9. gown poorly maintained	2.293
10. gown difficult to get into	2.286
11. unsure how gown is supposed to be worn	2.146
12. non-absorbant gown	2.065
13. gown too warm	2.033
14. gown too large	2.010
15. gown badly wrinkled	2.000
16. wearing gown with pants in public areas	1.791
17. gown faded or greying	1.710
18. gown too long	1.702
19. overall style of gown disliked	1.657
20. gown neckline disliked	1.632
21. gown sleeves disliked	1.469
22. wearing gown with robe over it in public areas	1.337
23. gown colour disliked	1.330

Note. Maximum mean value = 3

Minimum mean value = 1

public areas. It appears therefore that the colour of the gown and its fashion value or aesthetic appeal should be the least important considerations when designing a new patient gown and also indicates that a robe may provide the personal privacy that examination gowns in general do not provide.

Interviews with Clinical Staff

Interviews with physicians, nursing staff and radiographic/radiotherapeutic staff revealed that the basic requirement shared by the four staff groups was easy accessibility to all parts of the body. Problems encountered with the standard gown included having to lower the gown to examine the front chest, patients putting the gown on backwards making accessibility to the back chest difficult, and poorly functioning metal fasteners. The radiology department had the additional problem of the metal fasteners showing on x-ray film. An interview with the laundry department staff revealed that a standard laundry procedure is used for all gowns and that this department had not encountered any problems with the standard gown. Details for the data for these interviews may be found in Tables 10 through 13 in Appendix XI.

The information obtained from the patients and the clinical staff through the Pilot Study was taken into consideration in designing the new patient gown as illustrated in Appendix XII.

Comparison Study: Standard Gown vs. New Design

On the basis of the findings in the Pilot Study a new gown was designed and compared with a standard hospital gown having the same

degree of newness and fiber content. The fabric used was a 50/50 polyester cotton blend made especially for hospital gowns, the polyester providing the needed strength and the cotton providing the desired softness.

Two patient groups, Group A wearing the standard gown (n=50) and Group B wearing the new gown (n=50), completed a questionnaire after they had gone through the day's clinic appointment.

Background Data

Background data for the sample appears in Table 3. Subjects ranged in age from 18 upward, the majority wore medium dress sizes, most (68.7%) of them had attended the clinic more than 5 times and the majority had undergone 2 or 3 medical procedures that day.

Differences Between Standard and New Gown Groups on Selected Factors

Table 4 reports the results of the chi-square tests for significant differences between the answers to the questionnaire made by patients wearing the standard gown (Group A) and patients wearing the new gown (Group B) in terms of their opinions on fit/size factors, physical comfort, function factors, fashion value, colour and privacy factors. There were significant differences in terms of opinions on fit/size, colour and privacy factors. It should be noted that all significant differences favoured the new gown. There were no significant differences between groups in terms of opinions on physical comfort and fashion value.

Table 3

Frequency and Percentage Distribution on Background Data for Groups A (standard gown) and B (new gown) in the Comparison Study

Characteristic	Frequency		Percent	
	Group A	Group B	Group A	Group B
Age Group	n=50	n=49		
18-24	2	0	4.0	0.0
25-39	6	8	12.0	16.0
40-54	21	23	42.0	47.0
55 +	21	18	42.0	37.0
Total	50	49	100.0	100.0
Dress	n=50	n=50		
small size (10 or smaller)	5	4	10.0	8.0
medium (size 12 or 14)	26	24	52.0	48.0
large (size 16, 18 or 20)	16	17	32.0	34.0
extra large (size 42 or larger)	3	5	6.0	10.0
Total	50	50	100.0	100.0
Total Number of Clinic Visits	n=50	n=49		
first time	4	3	8.0	6.0
2-5 visits	13	11	26.0	23.0
more than 5 visits	33	35	66.0	71.0
Total	50	49	100.0	100.0
Number of Medical Procedures	n=50	n=50		
1 procedure	9	15	18.0	30.0
2 procedures	29	16	58.0	32.0
3 procedures	9	17	18.0	34.0
4 procedures	2	1	4.0	2.0
5 procedures	1	1	2.0	2.0
Total	50	50	100.0	100.0

Table 4

Chi-Square Tests for Significant Differences Between Group A (standard gown) and Group B (new gown) on Selected Factors

Group	Fit/ Size	Physical Comfort	Function	Fashion Value	Colour	Privacy
Group A (standard gown n=50	-	-	-	-	-	-
Group B (new gown) n=50	***	-	-	-	*	***

* $p < .05$ ** $p < .01$ *** $p < .001$

The degree of privacy and adequate fit provided for the randomly selected groups was significantly higher for those wearing the new gown design when compared to those wearing the standard gown. The provision of more privacy and improved fit of the new gown over the standard gown can be accounted for by the wrap around garment style, which permits an overlapping of front and back panels at gown sides.

There was also a significant difference between groups on colour preference. The pastel striped print of the new gown was preferred over the medium blue colour of the standard gown.

There were no significant differences between groups in terms of opinions on physical comfort, function and fashion value.

With regard to physical comfort, patients were asked if the gown was too warm, not warm enough, or comfortable (neither too warm nor

too cool). There were no significant differences between groups. It is proposed that the warmth provided by the wrapped gown may have been offset by its short sleeves and that although the standard gown is not wrapped, warmth is provided by the additional sleeve length.

There was no significant difference between groups on the functional characteristics of the two gowns. Both presented problems to a number of patients. Functional inadequacies with the standard gown resulted in some patients finding the gown difficult to fasten at the back of the neck and others not being sure how the gown is supposed to be worn. Functional inadequacies with the new gown resulted in some patients finding it difficult to get into the gown and others not being sure how the gown is supposed to be worn. A problem which had not been anticipated with the new gown was the resentment of some patients towards putting the gown on over their styled hair or wigs. The problem arose, because, due to the side effects of chemotherapy, many of the patients had lost or were losing their hair and either wore wigs or took great care in styling their thinning hair. It is expected, then, that such women would prefer to wear a gown that does not have to be put on over the head.

There were no significant differences between groups on fashion value factors, a result which was not of major concern since fashion value has been noted among the least important of factors contributing to embarrassment or discomfort to patients wearing examination gowns.

Differences Between Two Gown Groups Within Background Variables

The two gown groups (A and B) were further divided into the individual categories within each of the background variables; age, dress size, number of clinic visits and number of procedures. Chi-square tests for significant differences in opinion between Groups A and B were carried out. There were significant differences in terms of opinions on fit/size, colour and privacy factors for selected categories of the background variables. There were no significant differences between groups in terms of opinions on physical comfort, function, and fashion value. It should be noted that all significant differences favoured the new gown.

Age. When subjects were divided into categories according to age, differences between groups A (standard gown) and B (new gown) were significant in the 40-54 age category in terms of opinions on fit/size factors and in all age categories for opinions on privacy factors. For all age groups, in other words, the new gown provided a greater degree of privacy than the standard gown, although it is noteworthy that significance reached the .001 level for the 40-54 age category while for the younger and older age categories relationships were significant to .05 and .01 levels respectively.

Dress size. When subjects were divided into categories according to dress size, differences between Groups A and B were significant in the small and medium dress size categories in terms of opinions on fit/size factors and in medium and large dress size categories in terms

Table 5

Summary of Chi-Square Tests for Significant Differences Between Groups A (standard gown) and B (new gown) on Selected Physical and Social Psychological Characteristics when Categorized According to Age Groups, Dress Sizes, Number of Clinic Visits, and Number of Procedures (n=100)

Background Variable	Size/ Fit	Physical Comfort	Function	Fashion Value	Colour	Privacy
Age:						
18-39	-	-	-	-	-	*
40-54	**	-	-	-	-	***
55 +	-	-	-	-	-	**
Dress Size:						
small	*	-	-	-	-	-
medium	**	-	-	-	-	***
large	-	-	-	-	-	*
X-large	-	-	-	-	-	-
# Visits to Clinic:						
First	-	-	-	-	-	-
2-5	**	-	-	-	-	*
5	**	-	-	-	*	***
# Procedures Undergone:						
1	*	-	-	-	-	-
2	*	-	-	-	-	***
3, 4, 5	*	-	-	-	-	**

* $p < .05$ ** $p < .01$ *** $p < .001$

of opinions on privacy factors. That the new gown fit women who wore small and medium dress sizes better than did the standard gown, was most likely a function of the adjustability of the wrap around panels. There were no significant differences between opinions on the fit of the two gowns for women who wore large and extra large dress sizes indicating that for larger women, the new gown did not provide improved fit over the standard gown. Differences in the degree of privacy provided by the new gown compared to the standard gown were significant for those who wore medium and large dress sizes, again, a function of the overlapping panels. For women who wore small and extra large dress sizes, there were no significant differences between gowns in terms of opinions on privacy. Perhaps this indicates that for both gowns, there was an excess of fabric width available for overlapping for women wearing small dress sizes and no fabric excess available for women wearing extra large dress sizes.

Number of visits to the clinic. When subjects were divided into the number of times they had attended the clinic, differences between Groups A and B were significant for those who had attended the clinic more than once in terms of opinions on fit/size factors and privacy. For those who had attended more than 5 times, there was a significant difference in those preferring the new gown colour over the standard gown colour indicating that a variety in gown colours might be appreciated by those who attend the institute on a regular basis.

Number of procedures. When subjects were divided into categories undergone, differences between groups were significant in all

categories for opinions on fit/size factors. For women who underwent more than one procedure, differences were significant in terms of opinions on privacy factors. Most subjects having more than one procedure were required to go to another area of the institute, for example, the radiology department. The results therefore follow logically; because the new gown provided a greater degree of privacy than the standard gown, it was appreciated by those subjects who underwent more than one procedure.

It appears from the above results that women between the ages of 40-54, who wear medium dress sizes, and who have attended the clinic more than once would likely rate the new gown significantly better than the standard gown in terms of fit/size factors regardless of the number of procedures they have. Also women in the 40-54 age group, who wear medium dress sizes, have been to the clinic more than 5 times, and who must undergo two or more procedures, would rate the new gown significantly higher than the standard gown in terms of its provision of personal privacy. Since the largest proportion of patients attending the clinic are found within these subcategories, it must be concluded that the majority of patients in this clinic would rate the new design higher in terms of privacy and fit/size factors.

Interviews with Clinical Staff re: New Design

Interviews were conducted to evaluate the new gown design in terms of the extent to which it fulfilled the requirements of each staff group and to determine whether or not the new gown should be adopted.

Physicians and nursing staff. As reported in Tables 6 and 7 the new gown did not completely fulfill the functional requirements of the physicians and nursing staff. Difficulties encountered by them included the awkwardness of gaining easy access to the back chest area especially when the patient sat on the back panel; and difficulty in examining the neck area.

Radiographic/radiotherapeutic staff. The radiology and radiation therapy departments did not encounter any major difficulties with the new gown with the exception of the lateral positioning during mammography in which case the gown had to be removed. For this procedure, the standard gown must also be removed. A compilation of interview statements is reported in Table 8.

Laundry department staff. No major difficulties were encountered by the laundry department and the gown was acceptable in terms of the laundering procedures available. Interview results appear in Table 9.

With regard to the patients wearing pyjama bottoms in addition to the gown, there was such a variety of opinion from department to department and from physician to physician, perhaps the only reasonable recommendation is to have pants available for use in every department. Short bottoms should be available for neurological examinations and some radiology procedures and long bottoms for patients who are not warm enough during waiting periods between procedures.

With the exception of the radiology department staff, in whose opinion the gown should be adopted, all other departments would like a longer trial period or modifications to the gown and then another trial period before deciding whether or not the gown should be adopted.

Table 6

Compilation for all Statements with Frequency of Response
Resulting from Interview with Physicians
Re: New Design (n=12)

Question and Answer		Frequency
BASIC REQUIREMENTS MET?		
Yes		8
No		4
	Total	12
WHICH REQUIREMENTS NOT FULFILLED?		
Awkward to examine back chest		3
Difficult to examine neck area		2
Had to have the patients remove the gown in order to examine neck and front chest		1
	Total	6
OTHER PROBLEMS WITH THE GOWN?		
None		12
ANY OBJECTIONS TO PATIENTS WEARING PYJAMA BOTTOMS IN ADDITION TO GOWN?		
No objections		7
Would prefer patients did not wear them		3
Indifferent		1
Objects strongly		1
	Total	12
SHOULD THE NEW GOWN BE ADOPTED?		
Would like a longer trial period before deciding		7
Not without modifications		4
Yes		1
	Total	12

Table 7

Compilation for all Statements Resulting from Interview with Nursing Staff Re: New Design (n=2)

Question	Answer
New gown meet requirements:	Not completely
Which requirements not fulfilled?	Awkward to gain access to the back chest, especially if the patient sits on the back panel
Other problems with the gown?	Some patients are unsure of how to put the gown on; others of how to tie it properly
Any objections to patients wearing pyjama bottoms in addition to the gown when the examination permits?	No objections, except that it is often difficult to predict whether or not the physician will require that they be removed for examination
Should the new gown be adopted?	Not without modifications and another trial period

Table 8

Compilation for all Statements Resulting from Interview with Radiographic/Radiotherapeutic Staff Re: New Design (n=4)

Question	Answer
New gown meet requirements?	Yes, except for lateral positioning during mamography. For this procedure, the patient must remove the gown.
Any other problems with the gown?	None
Any objections to patients wearing pyjama bottoms in addition to the gown?	Diagnostic Radiology has no objections. Therapeutic Radiology has no objection except for those patients receiving abdominal radition.
Should the new gown be adopted?	Diagnostic Radiology - Yes Therapeutic Radiology would like a longer trial period before deciding.

Table 9

Compilation for all Statements Resulting from Interview with Laundry Staff Re: New Design (n=2)

Question	Answer
New gown acceptable in terms of laundering procedures available?	Yes
In your opinion should the new gown be adopted?	Uncertain - a longer trial period necessary before expressing an opinion

Hypotheses

Hypothesis 1

There will be no significant differences between patients wearing the standard gown (Group A) and patients wearing the new gown design (Group B) in terms of opinions on:

a) size/fit factors
b) physical comfort
c) function factors
d) fashion value factors
e) colour
f) privacy factors

There were significant differences between Group A and Group B in terms of opinions on size/fit factors, colour and privacy. There were no significant differences between Group A and Group B in terms of opinions on physical comfort, function and fashion value. The null hypothesis was therefore rejected in a), e) and f).

Hypothesis 2

When subjects are further grouped by age, there will be no significant differences between patients wearing the standard gown (Group A) and patients wearing the new gown (Group B) in terms of opinions on:

a) size/fit factors
b) physical comfort
c) function factors
d) fashion value factors
e) colour
f) privacy factors

There were significant differences between Group A and Group B in terms of opinions on size/fit factors in the 40-54 and privacy factors for all age groups. There were no significant differences between Group A and Group B in terms of opinions on physical comfort, function, fashion value and colour. The null hypothesis was therefore rejected in a) and f).

Hypothesis 3

When subjects are grouped according to dress size, there will be no significant differences between patients wearing the standard gown

design (Group B) in terms of opinions on:

a) size/fit factors

b) physical comfort

c) function factors

d) fashion value factors

e) colour

f) privacy factors

There were significant differences between Group A and Group B in terms of opinions on size/fit factors for those subjects in small and medium dress size categories and on privacy factors for those in medium and large dress size categories. There were no significant differences between Group A and Group B in terms of opinions on physical comfort, function, fashion value and colour. The null hypothesis was therefore rejected in a) and f).

Hypothesis 4

When subjects are grouped according to frequency of contact at the clinic, there will be no significant differences between patients wearing the standard gown (Group A) and patients wearing the new gown design (Group B) in terms of opinions on:

a) size/fit factors

b) physical comfort

c) function factors

d) fashion value factors

e) colour

f) privacy factors

There were significant differences between Group A and Group B in terms of opinions on: size/fit factors for those subjects who had attended the clinic more than once; colour for those who had attended the clinic more than 5 times; and privacy for those who had attended the clinic more than once. There were no significant differences between Group A and Group B in terms of opinions on physical comfort, function, and fashion value. The null hypothesis was therefore rejected in a), e) and f).

Hypothesis 5

When subjects are grouped according to the number of medical procedures undergone, there will be no significant differences between patients wearing the standard gown (Group A) and patients wearing the new gown design (Group B) in terms of opinions on:

a) size/fit factors
b) physical comfort
c) function factors
d) fashion value factors
e) colour
f) privacy factors

There were significant differences between Group A and Group B in terms of opinion on size/fit factors regardless of the number of procedures undergone, and on privacy factors for those subjects who underwent more than one procedure. There were no significant differences between Group A and Group B in terms of opinions on physical comfort, function, fashion value and colour. The null hypothesis was therefore rejected in a) and f).

Summary

The information obtained from the patients and clinical staff in the Pilot Study was taken into consideration and a new patient gown designed. The Comparison Study, the main focus of this work, included patients' reactions to the new gown and the standard gown in present use of the Dr. W. W. Cross Cancer Institute and an evaluation of the new gown by clinical staff groups.

The Pilot Study revealed that providing personal privacy for patients is the single most important consideration when designing an examination gown. The study also indicated that a patient gown should provide body warmth, should be constructed of a fabric which does not cling due to static electricity but which is absorbant, should be easy to get into and easy to tie or fasten and should be a garment that patients will know how to put on.

Results of the patient sample in the Comparison Study revealed that the new gown was favoured in terms of fit/size factors, colour and privacy factors only. One of the major difficulties encountered with the new gown was that numerous patients wore wigs, having experienced hair loss from chemotherapy, and did not wish to put gowns on over their heads.

The clinical staff results revealed that the new gown did not completely fulfill all functional requirements. The main objections arose in terms of gaining easy accessibility to the back chest and neck areas.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this research was to establish the functional and aesthetic requirements of female patients and hospital staff in terms of out-patient examination gowns and then to produce a new patient gown which would fulfill these requirements. The study was based on the belief that by establishing which gown factors or characteristics contribute to embarrassment or discomfort of patients and taking these into consideration when designing a new gown, patients should react more positively to the new garment. This in turn should reinforce a generalized positive feeling toward the self leaving patients more receptive to effective communication.

Two hundred and three women attending the Dr. W. W. Cross Cancer Institute's out-patient clinic voluntarily participated in this research project. For the Pilot Study, 103 female patients comprised the patient sample. A total of 16 staff members from the medical staff, nursing, radiology/radiotherapy and laundry departments comprised the staff participants.

The objectives of the Pilot Study were to classify and evaluate those examination gowns characteristics which could contribute to embarrassment or discomfort for female patients; and to determine the functional requirements of the various staff groups.

For the Comparison Study of the standard gown versus the new design, a questionnaire was administered to two groups. Group A stated their opinions with regard to selected factors on the standard gown and Group B stated their opinion with regard to selected factors on the new gown. Each of the 22 staff members who participated in the comparison study was interviewed after the introduction of the new gown. Staff interview data were analysed descriptively. Chi-square analysis was used to compare results of Group A with Group B.

Background information requested on both the Pilot Study and the Comparison Study Out-patient Questionnaires included age group, dress size, frequency of contact at the clinic and the number of procedures undergone on the day of data collection. This provided descriptive information for the sample and, in addition, the four background variables were used in the analyses comparing Group A and Group B on selected factors.

The results of the Pilot Study Patient Questionnaire revealed that the four factors causing the greatest degree of embarrassment or discomfort for examination gowns in general were: wearing a gown which is too small; wearing only a gown in public areas of the hospital; wearing a gown which is too short; and wearing a gown which is sheer enough through wear that the body outline can vaguely be seen through it. All of these factors influence the degree of personal privacy which a patient will experience when wearing a gown. It was concluded therefore that personal privacy for patients is the single most important consideration when designing an examination gown.

The Pilot Study revealed that the single requirement common to all staff groups except the laundry department was easy access to all parts of the body. The radiology department also required that metal snaps not be used on gowns.

When patient groups wearing the standard gown and the new gown design were compared there were significant differences between their opinions on fit/size factors, colour and privacy factors. When subjects were further divided according to categories within the background variables of age, dress size, number of clinic visits and number of procedures undergone, these significant differences remained for selected categories. It was noted that all significant differences favoured the new gown.

When clinical staff were asked about the new gown, it was revealed that the gown was functionally inadequate in terms of examining the neck area and back chest. The gown was acceptable in terms of the laundry procedures available. There were a variety of opinions with regard to the approval of patients wearing pyjama bottoms in addition to a gown. With the exception of the radiology department staff in whose opinion the gown should be adopted, all other departments would like a longer trial period or modifications to the gown and then another trial period before deciding whether or not the gown should be adopted.

The objectives delineated for the study were fulfilled. The purpose of the study was partially realized. The results of this research showed that a patient examination gown which provides for selected patient needs significantly better than the standard patient gown can

be designed; inadequacies with regard to the functional requirements of the examining physicians remained unsolved. It should be noted that when designing a gown for patients being treated for cancer one must bear in mind that numerous patients wear wigs and therefore resent having to put gowns on over their heads.

Conclusions

In the Review of Literature, a question was posed with regard to whether or not patients' needs, as they pertain to examination gowns, are being satisfied. This study provides strong evidence that not all patients' needs are being met by the gowns presently in use. Certain gown characteristics cause embarrassment or discomfort to patients.

It was found that on privacy and fit/size factors the new design was favored particularly by women in the 40-54 age group. It could be hypothesized that women in the 40-54 age group are more aware of the characteristics of gowns considered in this study and especially concerned with the fit of a garment and the privacy it can provide when compared to younger and older age categories.

It was interesting to note that for first visit subjects, there were no significant differences in opinions on the two gowns. Since the first visit to the clinic is frequently diagnostic in nature, the patient usually being referred to the institution because a malignancy is suspected, it is possible that due to an extreme state of anxiety, stimuli from clothing and environmental sources have little impact on the patient at this time.

It has been demonstrated that patient gowns such as the one developed for this study can be designed to meet the most important requirements of privacy and fit for the majority of patients. If so, it may be helpful in allaying disruptive anxiety from this source. In other words, certain features of the new design such as the wrap around panels which provide privacy and improved fit are successful and worthwhile retaining for patient comfort. Other features such as having to put the gown on over the head and having side openings should be eliminated since they produced negative responses and largely accounted for the functional inadequacies of the new design in terms of both physicians and patients.

Recommendations

1. The study should be repeated after developing a gown which incorporates the characteristics this study demonstrated to be lacking but important from both the patients' and clinical staffs' point of view.

2. Since the sample for this study was limited to female patients at the Dr. W. W. Cross Cancer Institute, it may prove interesting to repeat it with female patients attending a general hospital.

3. It would be interesting to conduct a similar study with regard to male patients and their needs in terms of examination gowns.

4. Further research in patient apparel should not be limited to the gown but expanded to include the use of a robe as well. This is because during the course of this study, a number of patients indicated that robes, like examination gowns, can be a source of embarrassment or discomfort to them.

References

Bachynski, G. Survey of Patient Clothing Used in Out-Patient Offices. Unpublished paper, University of Alberta, 1976.

Bard, M. The Psychological Impact of Cancer and Cancer Surgery. Proceedings of the American Cancer Society's National Conference on Human Values and Cancer, 1972, p. 24-26.

Dorland's Illustrated Medical Dictionary. Philadelphia: W. B. Saunders Company, 1965.

Horn, M. The Second Skin (2nd ed.). Boston: Houghton Mifflin, 1975.

Margerum, J. Men's Business Clothing Interview Schedule. Nevada Agriculture Experimental Station, Hatch Project 912. University of Nevada, 1974.

Mills, P. A. "Wrap-over" Pyjamas. Nursing Mirror, 1968, 127, 14.

Tinkler, L. F. Urological Sarong. British Journal of Urology, 1970, 42, 496-7.

Tinkler, L. F. A Gown for all Reasons. Nursing Times, 1972, 68, 1590-1.

APPENDICES

APPENDIX I: COVER LETTERS

Information Given to the Pilot Group About this Research

PROVINCIAL CANCER HOSPITALS BOARD
DR. W. W. CROSS CANCER INSTITUTE

PHONE 433 9461
11560 UNIVERSITY AVENUE
EDMONTON, ALBERTA, CANADA
T6G 1Z2

October 4, 1976

TO OUR PATIENTS:

Mrs. Gail Bachynski, a Registered Nurse, is now taking her Master's Degree in Clothing and Textiles at the University of Alberta. Her experience as a nurse has led her to adopt as her thesis topic, the design of a female outpatient examination gown which is comfortable and appealing to the majority of patients, yet meets the requirements of the physical examination. The Cross Cancer Institute also has been concerned with this subject and has attempted to assist Mrs. Bachynski in her work. We hope that you, too, will see this as a positive step and will take a few moments to complete the enclosed questionnaire. We believe that significant improvements can be made in the design of patient gowns, and your opinions will have a major influence upon the eventual design chosen. On behalf of Mrs. Bachynski, we would like to thank you for your co-operation and assistance.

Sincerely,

G.J. Tourigny, D.H.A.
Administrator
Dr. W.W. Cross Cancer
Institute

Encl.

GJT/jra

Information Given to Groups A and B About this Research

PROVINCIAL CANCER HOSPITALS BOARD
DR. W. W. CROSS CANCER INSTITUTE

PHONE 432-8771
11560 UNIVERSITY AVENUE
EDMONTON, ALBERTA, CANADA
T6G 1Z2

October 29, 1976

TO OUR PATIENTS:

The Institute is doing a study to determine the type of examination gown that would be most comfortable and appealing to women patients. While your answers to the questions which follow will remain confidential, your opinion will greatly influence the choice of gown the Institute eventually adopts for patient use. We thank you very much for assisting Mrs. Bachynski and the Institute in this study.

Sincerely,

G.J. Tourigny, D.H.A.
Administrator
Dr. W.W. Cross Cancer Institute

Encl.

GJT/jra

APPENDIX II: BACKGROUND QUESTIONNAIRES

Background Information - Pilot Study

FOR YOUR INFORMATION:

The clinic is doing a study to determine which type of examination gown is most comfortable and appealing to women patients. While your answers to the questions which follow will remain confidential, your opinion will greatly influence the gown the clinic will adopt for other patients.

DIRECTIONS: Please check off the appropriate answer(s) for each question on this page.

1. Age: ____ 15 - 24
   ____ 25 - 39
   ____ 40 - 54
   ____ 55 +

2. Dress size: ____ small (size 8 or 10)
   ____ medium (size 12 or 14)
   ____ large (size 16 or larger)

3. Number of times you have attended this clinic:
   ____ first time
   ____ 2 - 5 times
   ____ more than 5 times

4. Please check off any of the following which you have had today:
   ____ Examination by the doctor
   ____ X-rays
   ____ X-ray treatment
   ____ Other

Background Information - Groups A and B (Comparison Study)

DIRECTIONS: Please check off the appropriate answer or answers for each question on this page.

1. Age: ____ 18-24
   ____ 25-39
   ____ 40-54
   ____ 55 +

2. Dress size: ____ size 10 or smaller
   ____ size 12 or 14
   ____ size 16,18 or 20
   ____ size 42 or larger

3. Number of times you have attended this clinic:
   ____ first time
   ____ 2-5 times
   ____ more than 5 times

4. Please check off any of the following which you have had today.
   ____ Examination by the doctor
   ____ X-rays
   ____ X-ray treatment
   ____ Bone scan
   ____ Blood test
   ____ Other

APPENDIX III: CLOTHING QUESTIONNAIRES

Comparison Study (Groups A and B) Out-patient Clothing Questionnaire

DIRECTIONS: All of the questions on this page refer to the examination gown you have been wearing today. For each question, please check off the appropriate answer.

1. How does the gown fit?
   - ____ too small
   - ____ too large
   - ____ satisfactory fit

2. Is the gown:
   - ____ too long
   - ____ too short
   - ____ satisfactory in length

3. Is the gown:
   - ____ too warm
   - ____ not warm enough
   - ____ comfortable (neither too warm nor too cool)

4. When you were given the examination gown and instructed to put it on, were you sure how the gown was supposed to be worn? YES( ) NO( )

5. Was the gown easy to get into? YES( ) NO( )

6. Was the gown easy to tie or fasten? YES( ) NO( )

7. Do you like the overall style of the gown? YES( ) NO( )

8. Do you like the neckline? YES( ) NO( )

9. Do you like the sleeves? YES( ) NO( )

10. Do you like the colour of the gown? YES( ) NO( )

11. Is the gown suitable to wear in the hallways and waiting rooms of the hsopital if it is worn with a robe over it? YES( ) NO( )

12. Is the gown by itself (no robe or pants), suitable to wear in the hallways and waiting rooms of the hospital? YES( ) NO( )

13. Is the gown suitable to wear in the hallways and waiting rooms of the hospital if it is worn with pyjama bottoms or pants(no robe)? YES( ) NO( )

APPENDIX III

Pilot Study Out-patient Clothing Questionnaire

DIRECTIONS: The questions on this page refer to patient examination gowns in general. For each question, please check off the answer which most adequately expresses your feelings.

Would you be embarrassed or uncomfortable wearing an examination gown which:

	Definitely	Slightly	Not at all
1. is faded or greying?	[ ]	[ ]	[ ]
2. has obvious permanent stains on it?	[ ]	[ ]	[ ]
3. is too large for you?	[ ]	[ ]	[ ]
4. is too small for you?	[ ]	[ ]	[ ]
5. is too long?	[ ]	[ ]	[ ]
6. is too short?	[ ]	[ ]	[ ]
7. does not absorb moisture such as perspiration?	[ ]	[ ]	[ ]
8. clings due to static electricity?	[ ]	[ ]	[ ]
9. is too warm?	[ ]	[ ]	[ ]
10. is not warm enough?	[ ]	[ ]	[ ]
11. shows signs of poor maintenance such as frayed edges, holes or split seams?	[ ]	[ ]	[ ]
12. has become sheer enough through wear, that the outline of the body can vaguely be seen through it?	[ ]	[ ]	[ ]
13. is badly wrinkled?	[ ]	[ ]	[ ]
14. you suspect you may not have put on correctly?	[ ]	[ ]	[ ]
15. is difficult to get into?	[ ]	[ ]	[ ]
16. is difficult to tie or fasten?	[ ]	[ ]	[ ]
17. is a style you don't like?	[ ]	[ ]	[ ]
18. has a neckline you don't like?	[ ]	[ ]	[ ]
19. has sleeves you don't like?	[ ]	[ ]	[ ]
20. is a colour you don't like?	[ ]	[ ]	[ ]
21. Would you be embarrassed or uncomfortable wearing only an examination gown in the hallways or waiting rooms of the hospital?	[ ]	[ ]	[ ]

Would you be embarrassed or uncomfortable wearing an examination gown in the hallways or waiting rooms of the hospital if:

	Definitely	Slightly	Not at all
22. you were given pyjama bottoms or pants to wear with it?	[ ]	[ ]	[ ]
23. you were given a robe to wear over it?	[ ]	[ ]	[ ]

APPENDIX IV: STAFF INFORMATION

APPENDIX IV

Information Given to the Staff Sample About this Research

This study has been designed to develop a female out-patient examination gown which is comfortable and appealing to the majority of patients, meets the functional requirements of physical examination, nursing and radiological procedures and is acceptable in terms of institutional laundry procedures.

APPENDIX IV - continued. Physicians Instructions re: New Gown Design

Some of the patients you examine during the month of November may be wearing the patient gown pictured above. Have the patient undo the waistline ties, front and back. Then, since there are no underarm or side seams, the front and back panels of the gown may be draped to expose the part of the body being examined.

eg.

APPENDIX V: PHYSICIAN INTERVIEWS

APPENDIX V

Schedule for Interview with Physicians - Pilot Study Questions

1. What do you consider basic requirements in terms of the gown by female patients you are examining?
2. Have you encountered any problems with the examination gown presently in use?
3. Do you have any suggestions for improving the gown?

Schedule for Interview With Physicians Re: New Design

Since our first interview, a new patient examination gown has been introduced. Your stated requirements were as follows:

QUESTIONS

A.

1. Does the new gown meet these requirements?
   If not, specifically which of these requirements is not fulfilled?
2. Have you encountered any (other) problems with the gown?

B.

Do you have any objections to the patient wearing pajama bottoms in addition to a gown when the examination you are doing permits this?

APPENDIX V (Continued)

C.

In your opinion, should the new gown be adopted for female patients in the out-patient clinic?

APPENDIX VI: RADIOGRAPHIC/RADIOTHERAPEUTIC INTERVIEWS

APPENDIX VI

Schedule for Interview with Radiographic and Radiotherapeutic Staff - Pilot Study

Questions

1. What do you consider basic requirements in terms of the gown worn by female out-patients undergoing radiographic/radiotherapeutic procedures in your department?
2. Have you encountered any problems with the examination gown presently in use?
3. Do you have any suggestions for improving the gown?

Schedule for Interview with Radiographic and Radiotherapeutic Staff Re: New Gown Design

Since our first interview, a new patient examination gown has been introduced. Your stated requirements were as follows:

Questions

A.

1. Does the new gown meet these requirements?
   If not, specifically which of these requirements is not fulfilled?
2. Have you encountered any (other) problems with the gown?

B.

Do you have any objections to the patient wearing pyjama bottoms in addition to a gown when the radiology procedure permits this?

APPENDIX VI (Continued)

C.

In your opinion, should the new gown be adopted for female patients in the out-patient clinic?

APPENDIX VII: NURSING INTERVIEWS

APPENDIX VII

Schedule for Interview with Nursing Staff - Pilot Study

Questions

1. What do you consider basic requirements in terms of the examination gown worn by female patients on whom you perform nursing procedures in the out-patient area?
2. Have you encountered any problems with the examination gown presently in use?
3. Do you have any suggestions for improving the gown?

Schedule for Interview with Nursing Staff Re: New Design

Since our first interview, a new patient examination gown has been introduced. Your stated requirements were as follows:

Questions

A.

1. Does the new gown meet these requirements?
   If not, specifically which of these requirements is not fulfilled?
2. Have you encountered any (other) problems with the gown?

B.

Do you have any objections to the patient wearing pyjama bottoms to a gown when the nursing procedure permits this?

C.

In your opinion, should the new gown be adopted for female patients in the out-patient clinic?

APPENDIX VIII: LAUNDRY INTERVIEWS

APPENDIX VIII

Schedule for Interview with Laundry Staff - Pilot Study

Questions

1. Do you use a standard laundry procedure for all out-patient examination gowns or is a basic procedure adjusted to different fabric needs?
2. If you use one standard laundry procedure for all out-patient examination gowns, please describe it.

   OR

   If you use a basic laundry procedure which is adjusted to different fabric needs, please describe the basic procedure and state the manner in which it is altered.
3. Have you encountered any problems in the laundering of the examination gowns presently in use at The W. W. Cross Cancer Institute?
4. Do you have any suggestions that would facilitate the laundering of examination gowns?

Schedule for Interview with Laundry Staff Re: New Design

Since our first interview, a new examination gown design has been introduced.

Questions

1. Is the new gown acceptable in terms of the laundering procedure(s) available?

APPENDIX VIII (Continued)

If not specifically what problem(s) have been encountered?

2. In your opinion, should the new gown be adopted for female patients in out-patient clinics?

APPENDIX IX: CLOTHING SURVEY

APPENDIX IX

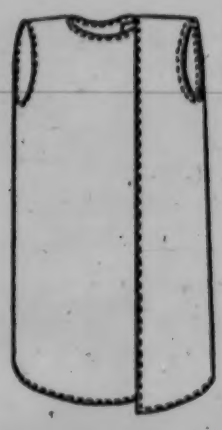
Questionnaire for Out-Patient Clothing Survey - Edmonton

1. Please check (✓) the type of gown/drape presently being used in your office/clinic.

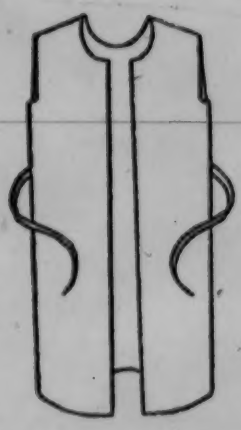
_____ Hospital gown - Style A (back view)

_____ Hospital gown - Style B (back view)

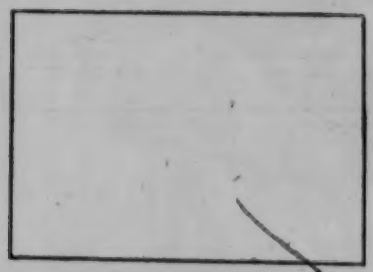
_____ Ponch Type



_____ Wraparound Type



_____ Disposable gown (back view)



_____ Other (please describe)

_____ Rectangular drape

B. Regarding the examination gown/drape presently being used check ( ) one.

_____ Completely satisfied with it.

_____ Moderately satisfied with it.

_____ Dissatisfied with it.

If you are not completely satisfied with the gown/drape, please state the reasons for your dissatisfaction. For example: specific problems or inadequacies in the garment design (please list them); maintenance costs; patient complaints; etc.

C. When ordering patient examination gowns/drapes, what factors are taken into consideration? Please number the following in order of importance, number one being the most important.

_____ Initial cost of the gown.

_____ Maintenance cost of the gown. .

_____ Gown must provide easy accessibility to the patient for examination.

_____ Gown must be easy for the patient to put on and remove.

_____ Gown must be comfortable for the patient (physical and psychological comfort).

_____ Other (please specify). _____

_____ Other (please specify). _____

D. Type of practice. _____

Thank you very much for taking the time to complete this questionnaire.

APPENDIX X: MANUFACTURERS

APPENDIX X

List of Hospital Apparel Manufacturers Who Responded to A Request for Information Regarding Patient Examination Gowns

Fabric Gowns

Angelica Whitewear Ltd., Montreal, Quebec.

Canadian Textile Enterprises Ltd., Calgary, Alberta.

Dalzell and Potts Ltd., Winnipeg, Manitoba.

Emery Manufacturing Co., Ltd., Edmonton, Alberta.

Kay Ltd., Winnipeg, Manitoba.

LacMac Ltd., London, Ontario.

Reynolds Mfg., Co. Ltd., Edmonton, Alberta.

Tex Pro Western, Vancouver, British Columbia.

Vancouver Garments Ltd., Vancouver, British Columbia.

Paper Gowns:

Busse Hospital Disposables of Canada, Ottawa, Ontario.

Ingram and Bell Ltd., Calgary, Alberta.

Ross Disposable Products, Toronto, Ontario.

APPENDIX XI: TABLES

Table 10

Compilation for all Statements Resulting from Pilot Study Interviews with Physicians (n=6)

Question	Answer
Basic requirements?	Easy access to all parts of the body
Problems with the gown presently being used?	- gown must be lowered to examine front chest - patients often wear the gown backwards making it difficult to examine the back chest without removing the gown - metal snaps frequently do not work or are difficult to fasten and unfasten
Suggestions for improving the gown?	Why not try: a. Velcro fasteners? b. robe type gown?

Table 11

Compilation for all Statements Resulting from Pilot Study Interview with Radiographic/Radiotherapeutic Staff (n=4)

Question	Answer
Basic requirements?	- easy access to all parts of the body - no metal snaps
Problems with the gown presently being used?	- metal shows on film (gown must be removed or pushed aside) - since the gown is back opening and the snaps seldom work, the gown falls open exposing the patient who is not wearing anything else
Suggestions for improving the gown?	- why not try Velcro fasteners? Diagnostic Radiology prefers a back opening gown. Therapeutic Radiology prefers a front opening gown for most treatments.

Table 12

Compilation for all Statements Resulting from Pilot Study Interview with Nursing Staff (n=2)

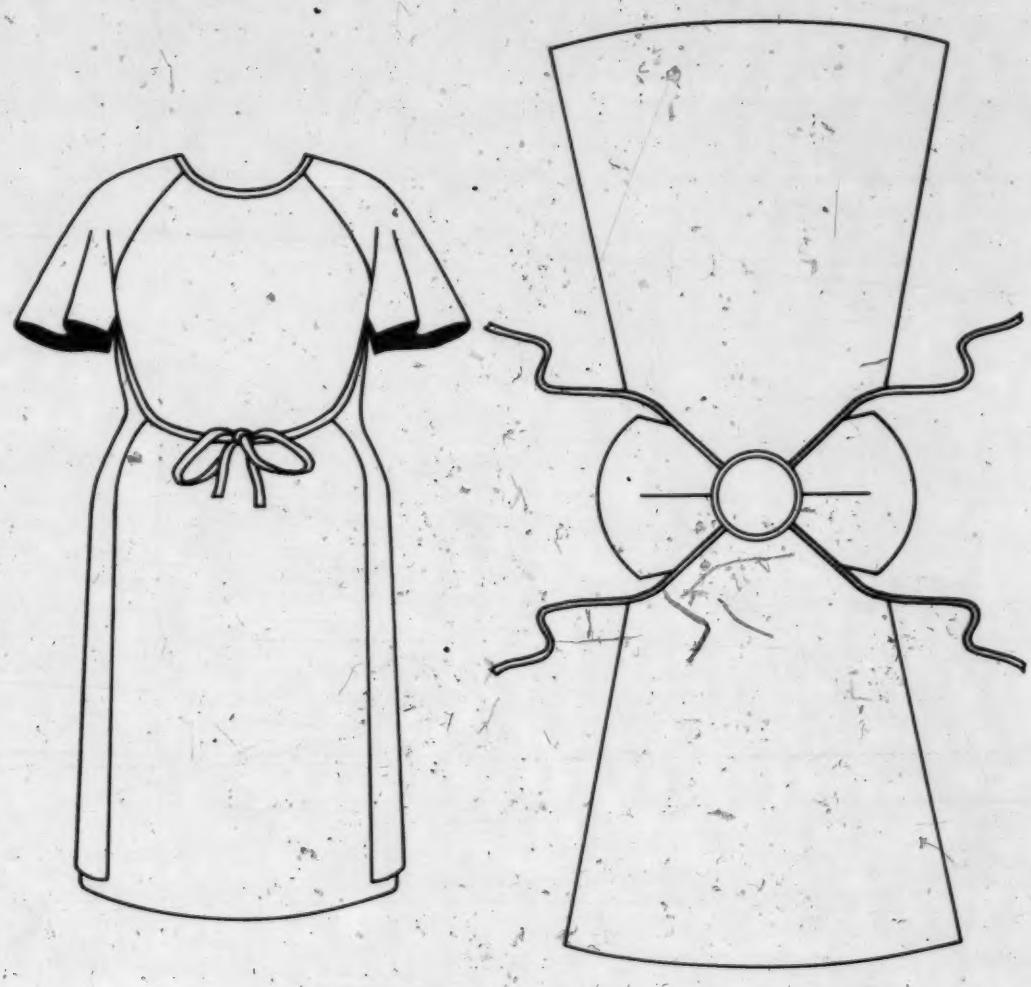
Question	Answer
Basic requirements?	Easy access to all parts of the body
Problems with the gown presently being used?	- metal snaps flatten and then won't work - some patients put the gown on backwards making it awkward to gain access to the back without removing the gown
Suggestions for improving the gown?	Fasteners other than metal

Table 13

Compilation for all Statements Resulting from Pilot Study Interview with Laundry Staff (n=2)

Question	Answer
Standard laundry procedure for all out-patient gowns?	Yes
Describe the laundry procedure.	Total wash and rinse cycle = 26 mins. Additives, in order of addition: - detergent (30 ozs.) - bleach (6 ozs.) - ammonium silica fluoride (4 ozs.) - softener with bacteriostatic agent (8 ozs.)
Suggestions that would facilitate the laundering of patient gowns?	None

APPENDIX XII: NEW GOWN DESIGN



VITA

M. Gail Bachynski

Candidate for the Degree of

Master of Science

Thesis: Female Medical Out-Patient Examination Gowns - The Establishment of Functional and Aesthetic Requirements and the Production of a New Design.

Major Field: Behavioral Science Aspects of Clothing and Textiles.

Biographical Information:

Personal Data:

Born in Montreal, Quebec, April 27, 1941; daughter of Margaret and William Marchuk; married to John Bachynski, 1968.

Education:

Graduated from Grade XI at Three Rivers High School in Trois Rivieres, Quebec, June 1958; received Registered Nurse Diploma from The Royal Victoria Hospital in Montreal, January 1962; received Bachelor of Arts degree, majoring in Anthropology, at the University of Alberta, May 1974; completed requirements for Master of Science degree at the University of Alberta in 1977.

Professional Experience:

1962-63 General staff nurse
Royal Victoria Hospital, Montreal

1964-65 Head Nurse, surgical ward
Royal Victoria Hospital, Montreal

1966-67 Nurse-secretary for the Chief of Hematology
Royal Victoria Hospital, Montreal

1968-70 Clinic Nurse
Capilano Medical Clinic, Edmonton

1974-75 Graduate Teaching Assistant
University of Alberta